

PROJECT NUMBER : 2526  
PROJECT TITLE : Greenhouse Operations and Cooperative Tobacco Variety  
Evaluation Programs  
PROJECT LEADER : R. T. Bass  
PERIOD COVERED : February, 1991

**I. GREENHOUSE STUDIES AND RESEARCH ACTIVITIES**

(R. Bass, G. Newell G. West and J. Kang)

- A. **Objective:** Maintain the R&D Greenhouses, conduct plant research studies, provide greenhouse-grown tobacco materials for support of other R&D programs, and provide requested assistance for special projects.
- B. **Results:** As requested by Project 6906, tobacco seed for several varieties were supplied for use in tissue culture research. The varieties were burley KY. 14, bright Speight G. 28, and Nicotiana rustica, brasilia R 120, and Nicotiana rustica, brasilia ACC 48.

At the request of Dr. S. Haut of Project 6908, two samples (1 carton each) of machine made burley cigarettes were provided. One sample was KY. 14 control from the 1984 Regional Farm Test. This sample was low in total secondary alkaloids. The second sample was N-88 from the 1989 Regional Farm Test and was high in total secondary alkaloids.

For Project 2501 we have provided two cigarette samples for chamber experimentation. One sample was KY. 14 control from the 1987 burley Regional Farm Test and the other sample was NC-95 from the 1987 bright Regional Farm Test.

A greenhouse tour and presentation was provided for a group of New York office personnel from the PM Corporate Planning Division and the Sales Staff.

As requested by A.Frisch, R.S.O., a small quantity of C-254 tobacco leaf tissue was provided for a radioactivity assay. This tobacco was from the first cold plant growth chamber run made in 1972.

An inventory was completed for our refrigerated storage supply of regular tobacco and cigarette samples in the two large lab refrigerators. The controls on the Foster refrigerator were repaired in late January.

The greenhouse benches have been set up for the production of Hydroponic Burley 21 tobacco, Group No. 28. The transplanting of 52 plants has been completed and all plants are showing good color and growth.

At the request of and in cooperation with Dr. Pat Bower of Miller Brewing Co., we have set up an experiment on bench No. 1 in the Greenhouse. In order to provide supplemental light, two lamps have been placed over bench No. 1. One is a metal halide lamp and the other is a high pressure sodium lamp. Rhizomes of 4 hop plant varieties, Fuggle, Mt. Hood, Cascade, and Galena have been planted in 10 inch

plastic pots containing our regular sand-vermiculite mixture. These have sprouted and are showing good growth. These plants will be grown large enough to provide adequate material for the planned research studies by Dr. Bower.

The regular Greenhouse plant production activities have been completed, including the preparation of 495 gallons of nutrient solution, the application of insecticide, the performance of all culture practices, and the seeding and transplanting of K-326, Speight G-28, KY. 14, Bu. 21, N. rustica, Oriental, N. glauca, and 4 varieties of hops (Fuggle, Mt. Hood, Cascade, and Galena).

The regular Greenhouse operational and maintenance tasks have been done on schedule including the repair of the receptacles on the north end wall and the wiring for the auxiliary lamps over benches No. 1 and 2.

C. **Plans:** Greenhouse operations and maintenance will be continued along with all requested support activities.

D. **References:**

1. G. Newell, N.B. No. 8762
2. G. West, N.B. No. 8559
3. R. Bass, N.B. No. 8999

## II. COOPERATIVE TOBACCO VARIETY EVALUATION PROGRAM

(R. Bass, G. Newell and G. West)

A. **Objective:** To participate in the cooperative tobacco industry program in order to assure that the quality of all new tobacco varieties meets or exceeds all requirements as defined by minimum standards program.

B. **Results:** The processing and cigarette making for the 1990 Burley Regional Farm Test samples has been completed. This includes the combined control, and entries #4,5,6,7, and 8. Cigarettes for each sample were shipped to the smoke flavor panels of four other participating tobacco companies for subjective evaluation. Samples were also submitted to our PM smoke panel for evaluation. The C.V. and O.V. determinations were completed and the values are shown below. No notable differences were observed.

SAMPLE CODE	FILLING VALUE* cc/gram	EQUILIBRIUM MOISTURE CONTENT* %
CONTROL	4.51	12.29
NO. 4	4.58	12.38
NO. 5	4.14	12.55
NO. 6	3.64	12.45
NO. 7	3.94	12.16
NO. 8	4.12	12.36

\* = The standard equilibration conditions of 75°F and 60% RH were used.

These values have been reported to the chairman of the Burley Tobacco Variety Evaluation Committee, Mr. J. R. Calvert of the University of Kentucky. A meeting of this committee is scheduled for Feb. 28 at Lexington, KY. Also on that day a meeting of the Standards Subcommittee is to be held.

At the request of Dr. S. Haut, arrangements were made with the Leaf Department Agr. Programs for the field production of about 500 pounds of LAB-21 tobacco. This tobacco was grown at the Greeneville, TN. Tobacco Experiment Station using standard production practices. After harvest and curing, it was stemmed and a quantity of 800 pounds of blended strip representing all stalk positions was delivered to Dr. Haut for project 6908 studies.

- C. Plans: To continue to participate in the Cooperative Tobacco Variety Evaluation Program.

### III. OTHER ACTIVITIES

1. Prepared report on Accomplishments for 1990.
2. Prepared and presented a Project Review for 1990.
3. Attended the Mold Symposium Meeting.
4. Attended R&D Strategy Plan Meeting.
5. Provided a copy of a 1966 report on Puffed Stem Slicing to P. Aument as requested.
6. Attended a meeting on the 1990 Burley Crop Satellite Survey given by the EOSAT Company in collaboration with PM Leaf Dept.

7. References:

1. R. Bass, N.B. No. 8999
2. G. Newell, N.B. No. 8762
3. G. West, N.B. No. 8559